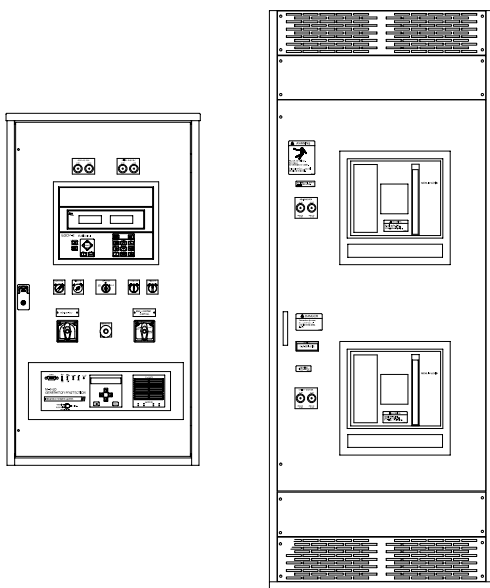


**PD-150 Front View
Integrated Control Section**



**PD-150 Front View
Remote Wall-Mounted Control Section**

Models:

**Dual Breaker
800-4000 Amps
480 Volts; 60 Hz**

The PD-150 parallels a single generator set to a single utility source. In conjunction with other PD-150s and user-supplied distribution switchgear, it is capable of paralleling up to eight generator sets together and/or paralleling up to eight generator sets and a single utility power source together.

The design allows for automatically starting, stopping, and paralleling the generator sets.

The PD-150 contains the operator interface, controls, protective relays, and circuit breakers. It is available as a fully integrated unit or with a remote wall-mount control section.

Standard Features

- UL 891 listed and labeled
- Service entrance rated
- Metering setup, control, and monitoring via the door-mounted digital paralleling controller
- Multifunctional utility-grade intertie protective relay
- Top or bottom cable entry
- Side or rear access
- Full capacity neutral bus
- 800 to 4000 amp drawout circuit breakers
- 100 kA interrupting capacity

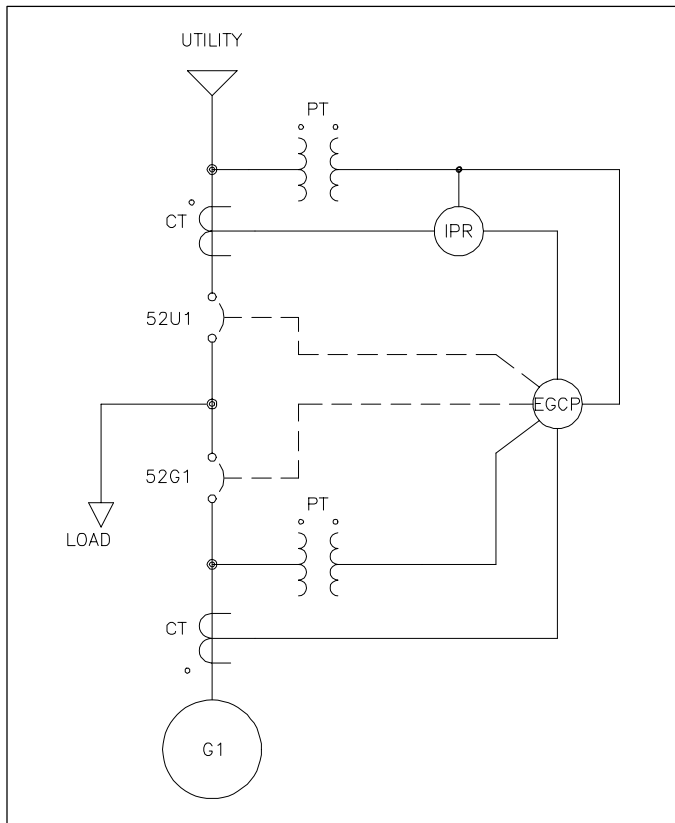
Modes of Operation

Each PD-150 includes the following user-selectable modes of operation:

- Prime power
- Emergency
- Isolate
- Import/export
- Base load generator

PD-150 Modes of Operation

Operating modes are selected using a door-mounted key switch.



PD-150 System Single Line

Prime Power/Remote ATS Start

Using a PD-150 for each generator set and user-supplied distribution switchgear, the system can parallel up to eight generators on an isolated bus.

Emergency

With utility power connected to the PD-150 utility circuit breaker, the PD-150 operates as a self-contained emergency standby switchgear system.

Base Load Generator

The generator set remains paralleled to the utility and is loaded to a user-adjustable kW level. When generator output power exceeds local load requirements, the surplus power is directed to the utility grid. When local load requirements exceed the generator base load level, the utility supplies the remaining load requirement.

Isolate

Local load transfers from the utility grid to the generator set. The system operates independently from the utility source until an operator terminates the isolate operation.

Import/Export

When importing power, the system is configured so that a constant, user-adjustable kW level flows from the utility. Generator output power fluctuates to meet differences between the utility import level and actual system load.

When exporting power, the system is configured so that a constant, user-adjustable kW level flows to the utility from the generator set. Generator output power fluctuates to meet differences between the export level and actual system load.

The system does not allow the generator set to exceed its maximum capacity.

Complete Power Systems

Kohler Co. provides complete power systems, from generator sets and fuel systems to automatic transfer switches. As a complete system manufacturer, Kohler Co. factory-tests each power system including the generator sets and transfer switches used at the jobsite. Testing the switchgear and generator sets as a complete system demonstrates the performance and compatibility of each system component, reducing the startup time required at the jobsite. System startup service is available from factory-trained personnel.

Generator Sets

Kohler Co. provides a complete line of prototype-tested generator sets from 20 kW to 2000 kW. Generator sets are available with a choice of cooling and exhaust systems and controller.

Automatic Transfer Switches

Kohler UL listed open transition transfer switches ensure reliable power source switching in an emergency. Transfer switches are available from 30–4000 amps as automatic transfer switches and 150–4000 amps as automatic transfer bypass isolation switches. Both are available with a full complement of accessories.

Components

Circuit Breakers

Draw-out electrically operated power circuit breakers are standard. The circuit breakers are UL listed and equipped with shunt trip and a microprocessor-based, true RMS sensing trip unit for overload and short circuit protection. Service entrance-rated utility circuit breakers include ground fault protection.

Generator Power Controller

A microprocessor-based generator power controller contains the generator-protective relaying, system logic, synchronizer, and generator load control.

Generator Protective Relays

- Over/Undervoltage (27/59)
- Over/Underfrequency (81 O/U)
- Reverse Power (32G)
- Loss of Excitation (40)

Synchronizer

An automatic synchronizer (25A) electronically adjusts the voltage and frequency of the generator to the voltage and frequency of the utility bus.

Intertie Protective Relay

The multifunctional intertie protective relay has the following protection:

- Phase undervoltage
- Phase overvoltage
- Over/underfrequency
- Negative sequence current
- Dual setpoint negative sequence voltage
- Potential transformer fuse loss detection
- Phase directional overcurrent
- Reconnect enable
- Rate of change frequency

Enclosure

The PD-150 is available in the following enclosures:

- NEMA Type 1: Standard indoor enclosure.
- NEMA Type 3R: Outdoor dripproof enclosure designed for mild climate.

Environmental Requirements

Ambient operating temperature rating of -16°C to 70°C (4°F to 158°F).

Construction

Bus System

Bus construction uses silver-flashed copper bars for phases, neutral, and ground. The system is sized to UL standards for the total load demand. The neutral bus is rated to 100% of phase current. A secured copper ground bus in the structure has a short-time withstand rating equal to the rating of the largest circuit breaker.

Cable Connections

Drilled bus bars and setscrew-type Cu/Al cable lugs (3/0 to 500) are standard for generator, utility, and load connections. The cable bending space of the PD-150 is designed for a maximum cable sizing of 500 MCM.

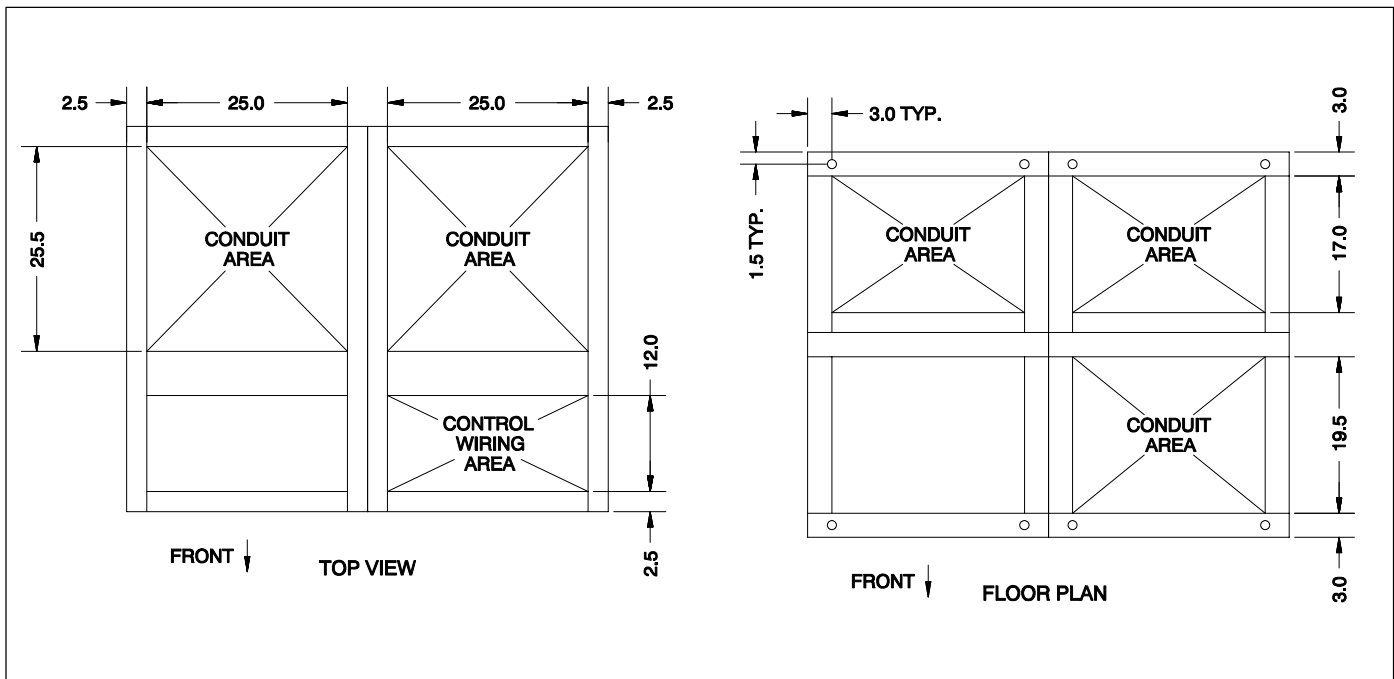
Ampacity	Lugs/Phase
800	3
1200	4
1600	5
2000	6
2500	8
3000	9
4000	12

Structure

The 800 to 4000 amp freestanding switchboard cubicle is built of formed, bolted sheetmetal for indoor installation. Cables can enter the top and/or bottom of the structure.

Finish

Sheetmetal parts are cleaned and phosphatized prior to painting. Parts are painted ANSI No. 49 gray.



PD-150 Structure Weights

NEMA Type 1 Structure Weight, kg (lb.)

Frame (A)	800	1200	1600	2000	2500*	3000*	4000*
Fixed	439 (967)	439 (967)	452 (997)	489 (1077)	851 (1877)	851 (1877)	933 (2057)
Drawout	480 (1057)	493 (1087)	538 (1187)	538 (1187)	947 (2087)	947 (2087)	1169 (2577)

* Includes 180 kg (400 lb.) auxiliary section

NEMA Type 3R Structure Weight, kg (lb.)

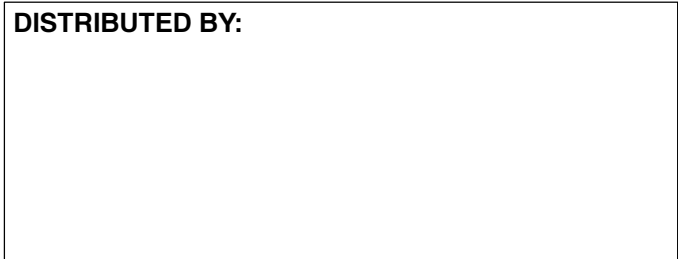
Frame (A)	800	1200	1600	2000	2500†	3000†	4000†
Fixed	620 (1367)	620 (1367)	634 (1397)	670 (1477)	1214 (2677)	1214 (2677)	1296 (2857)
Drawout	661 (1457)	675 (1487)	720 (1587)	720 (1587)	1310 (2887)	1310 (2887)	1532 (3377)

† Includes 360 kg (800 lb.) auxiliary section

Structure Dimensions, H x W x D, mm (in.)

Rating	NEMA Type 1	NEMA Type 3R
Up to 3000 Amp	1981 x 1524 x 1219 (78 x 60 x 48)	Consult factory
4000 Amp	Consult factory	Consult factory

DISTRIBUTED BY:



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